

**THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

SYCAMORE IP HOLDINGS LLC,

Plaintiff,

v.

ABB, INC. et al.,

Defendants.

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CASE NO. 2:15-CV-238-JRG

MEMORANDUM OPINION AND ORDER

Before the Court are Plaintiff Sycamore IP Holdings LLC's Opening Claim Construction Brief (Dkt. No. 137), Defendants' response (Dkt. No. 142), and Plaintiff's reply (Dkt. No. 147).

The Court held a claim construction hearing on December 3, 2015.

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I. BACKGROUND

Plaintiff brings suit alleging infringement of United States Patent No. 6,952,405 (“the ’405 Patent”). (Dkt. No. 137, Ex. 1.) The ’405 Patent, titled “Coding Scheme Using a Transition Indicator for Signal Transmission in Optical Communications Networks,” issued on October 4, 2005 and bears an earliest priority date of December 5, 2000. The Abstract states:

A coding scheme is provided transporting encoded information over an optical communications link to a network. Multi-word information groups are analyzed to determine whether each of the information groups includes control characters. If the information group does not include any control characters, an encoded information stream including a set data indicator and data words is generated. If the information group includes one or more control characters, an encoded information stream is generated which includes control code counters, a transition indicator, location pointers, control codes that are encoded from the control characters, and any data. Accordingly, the necessary bandwidth for transporting the information is reduced by using this encoded information stream without sacrificing any control information.

Plaintiff asserts Claims 1, 3-6, 8, 11, and 15-16. (Dkt. No. 137, at 2.)

Defendants submit that the ’405 Patent “was the product of Plaintiff’s predecessor’s attempt to influence industry standards,” but “the standard ultimately issued using a different encoding and decoding scheme invented by Steven Gorshe, not the named inventors of the ’405 Patent.” (Dkt. No. 142, at 1.)¹ Plaintiff replies that Defendants’ characterizations of industry standards are irrelevant to the present claim construction disputes. (Dkt. No. 147, at 1.)²

¹ “Unlike Messrs. Tsang’s and Azizoglu’s original proposal, Mr. Gorshe’s new ‘alternate means’ eliminated the need for a master ‘transition indicator’ by grouping a one-bit indicator, location pointer, and control code into a single byte (i.e., 8 bits). The ‘alternate means’ was believed to be ‘simpler,’ with a broader application than the previously proposed method. Ultimately, Mr. Gorshe’s new, simpler ‘alternate means’ was implemented into the standards at issue in this case, not the scheme proposed by Messrs. Tsang and Azizoglu.” (Dkt. No. 142, at 11 (citations omitted).)

² “[W]hether Defendants practice a patent in addition to the ’405 patent is of no relevance to literal infringement, let alone to claim construction.” (Dkt. No. 147, at 1 (citing *Water Techs. Corp. v. Calco, Ltd.*, 850 F.2d 660, 668 (Fed. Cir. 1988) (“[I]t is elementary patent law that a patent may issue on an improvement which infringes another’s patent.”)).)

II. LEGAL PRINCIPLES

It is understood that “[a] claim in a patent provides the metes and bounds of the right which the patent confers on the patentee to exclude others from making, using or selling the protected invention.” *Burke, Inc. v. Bruno Indep. Living Aids, Inc.*, 183 F.3d 1334, 1340 (Fed. Cir. 1999). Claim construction is clearly an issue of law for the court to decide. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970-71 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996).

To ascertain the meaning of claims, courts look to three primary sources: the claims, the specification, and the prosecution history. *Markman*, 52 F.3d at 979. The specification must contain a written description of the invention that enables one of ordinary skill in the art to make and use the invention. *Id.* A patent’s claims must be read in view of the specification, of which they are a part. *Id.* For claim construction purposes, the description may act as a sort of dictionary, which explains the invention and may define terms used in the claims. *Id.* “One purpose for examining the specification is to determine if the patentee has limited the scope of the claims.” *Watts v. XL Sys., Inc.*, 232 F.3d 877, 882 (Fed. Cir. 2000).

Nonetheless, it is the function of the claims, not the specification, to set forth the limits of the patentee’s invention. Otherwise, there would be no need for claims. *SRI Int’l v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1121 (Fed. Cir. 1985) (en banc). The patentee is free to be his own lexicographer, but any special definition given to a word must be clearly set forth in the specification. *Intellicall, Inc. v. Phonometrics, Inc.*, 952 F.2d 1384, 1388 (Fed. Cir. 1992). Although the specification may indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims when the claim

language is broader than the embodiments. *Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc.*, 34 F.3d 1048, 1054 (Fed. Cir. 1994).

This Court's claim construction analysis is substantially guided by the Federal Circuit's decision in *Phillips v. AWH Corporation*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). In *Phillips*, the court set forth several guideposts that courts should follow when construing claims. In particular, the court reiterated that "the claims of a patent define the invention to which the patentee is entitled the right to exclude." 415 F.3d at 1312 (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). To that end, the words used in a claim are generally given their ordinary and customary meaning. *Id.* The ordinary and customary meaning of a claim term "is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1313. This principle of patent law flows naturally from the recognition that inventors are usually persons who are skilled in the field of the invention and that patents are addressed to, and intended to be read by, others skilled in the particular art. *Id.*

Despite the importance of claim terms, *Phillips* made clear that "the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Id.* Although the claims themselves may provide guidance as to the meaning of particular terms, those terms are part of "a fully integrated written instrument." *Id.* at 1315 (quoting *Markman*, 52 F.3d at 978). Thus, the *Phillips* court emphasized the specification as being the primary basis for construing the claims. 415 F.3d at 1314-17. As the Supreme Court stated long ago, "in case of doubt or ambiguity it is proper in all cases to refer back to the descriptive portions of the specification to aid in solving the doubt or in ascertaining the true

intent and meaning of the language employed in the claims.” *Bates v. Coe*, 98 U.S. 31, 38 (1878). In addressing the role of the specification, the *Phillips* court quoted with approval its earlier observations from *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998):

Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct construction.

Phillips, 415 F.3d at 1316. Consequently, *Phillips* emphasized the important role the specification plays in the claim construction process.

The prosecution history also continues to play an important role in claim interpretation. Like the specification, the prosecution history helps to demonstrate how the inventor and the United States Patent and Trademark Office (“PTO”) understood the patent. *Id.* at 1317. Because the file history, however, “represents an ongoing negotiation between the PTO and the applicant,” it may lack the clarity of the specification and thus may be less useful in claim construction proceedings. *Id.* Nevertheless, the prosecution history is intrinsic evidence that is relevant to the determination of how the inventor understood the invention and whether the inventor limited the invention during prosecution by narrowing the scope of the claims. *Id.*; see *Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1350 (Fed. Cir. 2004) (noting that “a patentee’s statements during prosecution, whether relied on by the examiner or not, are relevant to claim interpretation”).

Phillips rejected any claim construction approach that sacrificed the intrinsic record in favor of extrinsic evidence, such as dictionary definitions or expert testimony. The *en banc* court condemned the suggestion made by *Texas Digital Systems, Inc. v. Telegenix, Inc.*, 308 F.3d 1193

(Fed. Cir. 2002), that a court should discern the ordinary meaning of the claim terms (through dictionaries or otherwise) before resorting to the specification for certain limited purposes.

Phillips, 415 F.3d at 1319-24. According to *Phillips*, reliance on dictionary definitions at the expense of the specification had the effect of “focus[ing] the inquiry on the abstract meaning of words rather than on the meaning of claim terms within the context of the patent.” *Id.* at 1321. *Phillips* emphasized that the patent system is based on the proposition that the claims cover only the invented subject matter. *Id.*

Phillips does not preclude all uses of dictionaries in claim construction proceedings. Instead, the court assigned dictionaries a role subordinate to the intrinsic record. In doing so, the court emphasized that claim construction issues are not resolved by any magic formula. The court did not impose any particular sequence of steps for a court to follow when it considers disputed claim language. *Id.* at 1323-25. Rather, *Phillips* held that a court must attach the appropriate weight to the intrinsic sources offered in support of a proposed claim construction, bearing in mind the general rule that the claims measure the scope of the patent grant.

III. CONSTRUCTION OF AGREED TERMS

The Court hereby adopts the following agreed construction:

| <u>Term</u> | <u>Agreed Construction</u> |
|-----------------------------------|------------------------------|
| “control codes” (Claims 1, 8, 11) | “encoded control characters” |

(Dkt. No. 132, Sept. 24, 2015 Joint Claim Construction Statement, at 2; Dkt. No. 154, Nov. 30, 2015 Amended Joint Claim Construction Chart, at 2.)

IV. CONSTRUCTION OF DISPUTED TERMS

A. “control characters”

| Plaintiff’s Proposed Construction | Defendants’ Proposed Construction |
|--|-----------------------------------|
| “one or more bits in an information group representing control information” ³ | “unencoded control codes” |

(Dkt. No. 132, Ex. B, at 7; Dkt. No. 137, at 5; Dkt. No. 142, at 25; Dkt. No. 147, at 5; Dkt. No. 154, at 2.) The parties submit that this term appears in Claims 1, 5-6, 8, and 11. (Dkt. No. 154, at 2.)

After briefing, the parties submitted an agreed-upon construction in their November 30, 2015 Amended Joint Claim Construction Chart. (*Id.*)

In accordance with the parties’ agreement, the Court hereby construes **“control characters”** to mean **“bits in an information group representing control information.”** (*Id.*)

B. “information group”

| Plaintiff’s Proposed Construction | Defendants’ Proposed Construction |
|---|---|
| “bits comprising data words and/or control characters” ⁴ | “a series of segmented and unencoded information” |

(Dkt. No. 132, Ex. B at 1; Dkt. No. 137, at 7; Dkt. No. 142, at 26; Dkt. No. 154, at 2.) The parties submit that this term appears in Claims 1, 4-5, 8, 11, and 15-16. (Dkt. No. 154, at 2.)

After briefing, the parties submitted an agreed-upon construction in their November 30, 2015 Amended Joint Claim Construction Chart. (Dkt. No. 154, at 2.)

³ Plaintiff previously proposed: “field of an information group representing control information.” (Dkt. No. 132, Ex. A, at 1.)

⁴ Plaintiff previously proposed: “group of fields comprising data words and/or control characters.” (Dkt. No. 132, Ex. A, at 1.)

In accordance with the parties' agreement, the Court hereby construes **“information group”** to mean **“a series of bits comprising data words, control characters, or a combination of both data words and control characters.”** (*Id.*)

C. “encoded information stream”

| Plaintiff’s Proposed Construction | Defendants’ Proposed Construction |
|--|--|
| No construction needed | “an encoded information group” |

(Dkt. No. 132, Ex. A, at 1; *id.*, Ex. B, at 3; Dkt. No. 137, at 9; Dkt. No. 142, at 27; Dkt. No. 147, at 5; Dkt. No. 154, at 2.) The parties submit that this term appears in Claims 1, 4, 8, 11, and 16. (Dkt. No. 154, at 2.)

After briefing, the parties submitted an agreed-upon construction in their November 30, 2015 Amended Joint Claim Construction Chart. (Dkt. No. 154, at 2.)

In accordance with the parties' agreement, the Court hereby finds as to **“encoded information stream”** that there is **“no construction needed.”** (*Id.*)

D. “data indicator”

| Plaintiff’s Proposed Construction | Defendants’ Proposed Construction |
|---|--|
| “one or more bits that when set indicate that the associated information group does not include control characters, and the encoded information stream does not include control codes” ⁵ | “a bit indicating the presence or absence of control codes in the encoded information stream” ⁶ |

⁵ Plaintiff previously proposed: “field that when set indicates that the associated information group does not include control characters, and the encoded information stream does not include control codes.” (Dkt. No. 132, Ex. A, at 1.)

⁶ “Defendants’ originally proposed construction of this term included a typographical error and erroneously referred to ‘control characters’ instead of ‘control codes.’ Plaintiff correctly identified this error as a typographical mistake in its Claim Construction Brief. (Dkt. No. 137 at 12.)” (Dkt. No. 142, at 13 n.6.)

(Dkt. No. 132, Ex. B, at 6; Dkt. No. 137, at 11; Dkt. No. 142, at 13; Dkt. No. 147, at 6; Dkt. No. 154, at 2.) The parties submit that this disputed term appears in Claims 1, 5, 8, and 11. (Dkt. No. 154, at 2.)

(1) The Parties' Positions

Plaintiff urges that “the claims and the specification provide no support for limiting the ‘data indicator’ to a single bit,” and Plaintiff argues claim differentiation as to Claim 5. (Dkt. No. 137, at 11-12.)

Defendants respond that “[t]he specification of the ’405 Patent never indicates that the ‘data indicator’ can be more than one bit and, in fact, expressly refers to the data indicator as ‘an indicator bit’ using the singular form of the word ‘bit.’” (Dkt. No. 142, at 13-14.) As to Plaintiff’s claim differentiation argument, Defendants respond: “The additional limitation in claim 5 is not that the data indicator is a single bit, as Plaintiff claims. Rather, the additional limitation in claim 5 is that the data indicator—which is always one bit—must be set as the first bit in an encoded data stream.” (*Id.* at 15.)

Plaintiff replies that “[o]ther than dependent claim 5, the claims place no limit on the number of bits for a ‘data indicator,’” and the specification “uses permissive, non-limiting language.” (Dkt. No. 147, at 6.)

At the December 3, 2015 hearing, Defendants argued that words such as “typically” in the specification indicate that there may be multiple *ways* to set a bit, not that there may be multiple bits instead of one bit. Likewise, as to Plaintiff’s reliance upon Claim 5, Defendants argued that dependent Claims 5 and 6 refer to setting a bit to particular levels, not to using a single bit rather than multiple bits.

(2) Analysis

Claims 1, 5, and 6 of the '405 Patent, for example, recite in relevant part (emphasis added):

1. A method for transporting multi-word information groups containing data words and control characters over a communications link, comprising the steps of:
 - (a) determining whether each of said information groups includes control characters;
 - (b) for each information group that does not include control characters, setting a *data indicator* and combining said *data indicator* with the data words of the information group to generate an encoded information stream including said *data indicator* and the data words; and
 - (c) for each information group that includes one or more control characters, generating an encoded information stream by the steps of,
 - (i) encoding the control characters to control codes,
 - (ii) generating a transition indicator based on the number of control characters for indicating the occurrence of a final control code in the encoded information stream,
 - (iii) generating a location pointer for each of the control codes representative of the sequential position within the information group for each of the corresponding control characters, and
 - (iv) combining the control codes, the data words, said location pointers, and said transition indicator for each information group to form the encoded information stream.

* * *

5. The method according to claim 1, wherein said step (b) further comprises the step of *setting a first bit to a first logical level as said data indicator* when the information group does not include control characters.
6. The method according to claim 5, wherein said step (c) further comprises the step of *setting said bit to a second logical level opposite to said first logical level* when the information includes one or more control characters.

Claim 5 refers to “setting a *first* bit . . . as said data indicator.” Moreover, the context provided by further dependent Claim 6 demonstrates that Claim 5 is concerned not with the number of bits but rather with logical levels. Claim 5 thus does not provide sufficiently clear support for Plaintiff’s claim differentiation argument. *See Wenger Mfg., Inc. v. Coating Mach. Sys., Inc.*, 239 F.3d 1225, 1233 (Fed. Cir. 2001) (“Claim differentiation, while often argued to be

controlling when it does not apply, is clearly applicable when there is a dispute over whether a limitation found in a dependent claim should be read into an independent claim, and that limitation is the *only meaningful difference* between the two claims.”) (emphasis added).

Further, the specification discloses using a single “indicator bit”:

The rate optimizing encoder 210 generates a *data indicator, or an indicator bit*, when there are no control characters detected in the information group. *For instance, the indicator bit* may be set to a first logical level (*the bit may be set to “0” for example*) for indicating that only data will follow. When there are no control characters present, the indicator bit and the word group containing all data is sent to the serializer 280 which generates the encoded information stream to be sent to the network 290. Thereafter, the serializer 280 generates an encoded information stream.

FIG. 3(a) illustrates one example of a configuration for an encoded information stream 400, which includes a field 414₁ for a data indicator and data fields 420₁, . . . 420_n, to be sent to the network 290. The encoded information stream 400 is configured in this manner when control characters are not present in the information group and only data is to be sent to the network 290. Therefore, the set data indicator is placed in field 414₁ and the data is placed within the data fields 420₁, . . . 420_n of the encoded information stream 400. In one example of segmenting the encoded information stream 400 when four 8-bit words are transmitted, *a first bit is set as the data indicator* in field 414₁ and the data fields 420₁, 420₂, 420₃, and 420₄ of the encoded information stream 400 are divided into four 8-bit fields for the data. It is understood that the data indicator field 414[] and the data fields 420₁, . . . 420_n may be arranged in many other predetermined orders within the encoded information stream 400.

’405 Patent at 4:33-60 (emphasis added).

When at least one control code is detected, the first field 414 includes a variable number of bits 414₁, . . . 414_w including a transition indicator (preferably the last bit of the first field 414) for indicating that no more control characters are present in the information group. For instance, the first field 414 may include bits 414₁ . . . 414_{w-1} set to a first logical level for each time that a control character is detected, to function as control code counters. The last bit 414_w (the transition indicator) is set to a second logical level opposite to the first logical level when there are no more control characters within the information group, to indicate the end of the first field 414. The first field 414 also includes the *data indicator 414₁* which is *typically* one unset bit (to a logical level opposite to the set data indicator), for indicating that at least one control character is present within the information group.

Id. at 5:18-33 (emphasis added).

The independent claims at issue, however, recite a “data indicator,” not a data indicator bit. On balance, using a single bit as a “data indicator” is a specific feature of particular disclosed embodiments that should not be imported into the claims. *See, e.g., Electro Med.*, 34 F.3d at 1054; *Phillips*, 415 F.3d at 1323; *Praxair, Inc. v. ATMI, Inc.*, 543 F.3d 1306, 1323 (Fed. Cir. 2008) (“the word ‘typically’ ... impl[ies] that the passage describes only the most common embodiment rather than the full scope of the invention”). The Court therefore hereby expressly rejects Defendants’ proposed construction.

The Court accordingly hereby construes **“data indicator”** to mean **“one or more bits that when set indicate that the associated information group does not include control characters and the encoded information stream does not include control codes.”**

E. “transition indicator”

| Plaintiff’s Proposed Construction | Defendants’ Proposed Construction |
|---|---|
| “one or more bits that indicate the occurrence of a final control code in an encoded information stream” ⁷ | “a bit set to a logical level opposite the logical level of all preceding bits within the field that functions as a control code counter to indicate the transitions within the encoded information stream” |

(Dkt. No. 132, Ex. B, at 2; Dkt. No. 137, at 14; Dkt. No. 142, at 15; Dkt. No. 147, at 1; Dkt. No. 154, at 2.) The parties submit that this disputed term appears in Claims 1, 8, and 11. (Dkt. No. 154, at 2.)

⁷ Plaintiff previously proposed: “field that indicates the occurrence of a final control code in an encoded information stream.” (Dkt. No. 132, Ex. A, at 2.)

(1) The Parties' Positions

Plaintiff argues that whereas “[Plaintiff’s] construction is taken directly from the claim,” “Defendants use the term ‘transition indicator’ as a launching pad to inject numerous limitations, which the patent consistently identifies as exemplary, from certain claims and the specification into all the claims.” (Dkt. No. 137, at 14-15.) In particular, Plaintiff argues that a “control code counter” limitation appears only in dependent claims, and although “certain claims provide express limitations regarding the manner in which the ‘logical level’ of a ‘bit’ is set,” “[o]ther claims, such as claim 1, do not have any limitations directed to the logical level to which any bits are required to be set.” (*Id.* at 15-16.) Plaintiff also urges that for the same reasons as for the term “data indicator,” there is no support for limiting “transition indicator” to a single bit. (*Id.* at 14 n.3.) Plaintiff further emphasizes that Figure 3B of the ’405 Patent is disclosed as illustrating an “*example* of a configuration for the encoded information stream.” (*Id.* at 18 (quoting ’405 Patent at 3:13-15 (emphasis Plaintiff’s)).) As to the prosecution history, Plaintiff argues that “[t]he applicants nowhere stated, suggested or implied that *the only way* to base a ‘transition indicator on the number of control characters’ is to place it as the last bit of a particular field 414 that functions as a control code counter.” (Dkt. No. 137, at 20-21.)

Defendants respond that “Plaintiff’s proposed construction . . . ignores most of the functionality associated with the transition indicator in an effort to read the ’405 Patent broadly to cover standards that are materially different than what is disclosed in the ’405 Patent.” (Dkt. No. 142, at 15.) Defendants urge that the disputed term must be construed consistent with “the *only* description of the transition indicator that the applicants provided in the specification to describe their invention.” (*Id.* at 19.) Further, Defendants argue, during prosecution, the patentees “distinguished the claimed ‘transition indicator’ from the prior art by explaining that

the transition indicator of claim 1 *must* be based on the number of control characters because it is disposed in a field that functions as a control code counter.” (*Id.*) Finally, Defendants submit that “the transition indicator indicates the transitions within the encoded information stream” because “each location pointer and each control code has a fixed size.” (*Id.* at 20.)

Plaintiff replies that Defendants’ proposed construction “wrongly reads limitations from some claims into all the claims.” (Dkt. No. 147, at 2.) Plaintiff emphasizes: “The asserted claims do not contain any limitations requiring a ‘field’ or ‘control code counters,’ let alone limitations requiring a ‘field’ that includes both ‘control code counters’ and a ‘transition indicator.’ The claims also contain no limitations regarding the logical level at which a ‘transition indicator’ must be set.” (*Id.*) Plaintiff further submits that “the patent’s description of the preferred embodiment is permissive and provides no ‘clear intention’ to limit the claims to particular fields with the ‘transition indicator’ located in a particular location of a particular field that also contains a ‘control code counter.’” (*Id.* at 3.)

At the December 3, 2015 hearing, Defendants reiterated that, during prosecution, the patentees distinguished prior art by noting that the claimed transition indicator is based on the number of control characters. Plaintiff replied that the language relied upon by Defendants appears elsewhere in Claim 1 but not other claims, and the prosecution history cited by Defendants refers to only Claim 1. Defendants also argued that Plaintiff’s proposed construction, if adopted, would disable Claim 7. Plaintiff replied that Defendants’ argument as to Claim 7 was not briefed and should therefore be disregarded. Alternatively, Plaintiff argued that dependent Claim 7 is of narrower scope than Claim 1 from which it depends and therefore the limitations of dependent Claim 7 should not be imported into the independent claims.

(2) Analysis

Claims 1, 8, and 11 of the '405 Patent recite (emphasis added):

1. A method for transporting multi-word information groups containing data words and control characters over a communications link, comprising the steps of:

(a) determining whether each of said information groups includes control characters;

(b) for each information group that does not include control characters, setting a data indicator and combining said data indicator with the data words of the information group to generate an encoded information stream including said data indicator and the data words; and

(c) for each information group that includes one or more control characters, generating an encoded information stream by the steps of,

(i) encoding the control characters to control codes,

(ii) generating a *transition indicator* based on the number of control characters for indicating the occurrence of a final control code in the encoded information stream,

(iii) generating a location pointer for each of the control codes representative of the sequential position within the information group for each of the corresponding control characters, and

(iv) combining the control codes, the data words, said location pointers, and said *transition indicator* for each information group to form the encoded information stream.

* * *

8. [A] method for transporting multi-word information groups containing data and control characters over a communications link, comprising the steps of:

(a) encoding each of said information groups to an encoded information stream including a data indicator and data words when said information group does not include control characters; and

(b) encoding control characters to control codes, generating a *transition indicator* and location pointers, and combining said control codes, said *transition indicator*, said location pointers, and any data words present in said information group to form said encoded information stream when one or more control characters are included in said information group.

* * *

11. A system for transporting multi-word information groups containing data words and control characters over a communications link, comprising:

a rate optimizing encoder for determining whether each of said information groups includes control characters, for each information group that does not include control characters, said rate optimizing encoder setting a data indicator and ordering said data indicator and the data words, and for each

information group that includes one or more control characters, encoding the control characters to control codes, generating a *transition indicator* and a location pointer for each of the control codes, and ordering said *transition indicator*, said location pointers, said control codes and any data words; and a serializer for generating an encoded information stream by combining said data indicator and the data words for each information group that does not include any control characters, and by combining said *transition indicator*, said location pointers, said control codes and any data words for each information group that includes one or more control characters.

The specification discloses:

[With reference to FIG. 3(b),] [t]he first and second fields 414 and 418 are for storing information relating to the number of control characters and their sequential position within the information group. The sizes of these first and second fields 414 and 418 vary depending upon the number of control characters and words in the information group.

* * *

When at least one control code is detected, the first field 414 includes a variable number of bits $414_1, \dots, 414_w$ including a *transition indicator* (*preferably the last bit of the first field 414*) for indicating that no more control characters are present in the information group. For instance, the first field 414 may include bits $414_1 \dots 414_{w-1}$ set to a first logical level for each time that a control character is detected, to function as control code counters. *The last bit 414_w (the transition indicator) is set to a second logical level opposite to the first logical level when there are no more control characters within the information group, to indicate the end of the first field 414.*

Id. at 4:66-5:4 & 5:18-29 (emphasis added); *see id.* at 5:44-47 (“Because the first field 414 only indicates the number of control characters present, the second field 418 is provided for indicating the sequential positions of the control characters within the information group.”).

For example, if four control characters are detected in the information group, the first field 414 includes five bits set to “11110”, where the first “1” bit indicates that at least one control code is present, the next three “1” bits each indicate the presence of control codes, and the “0” bit or *transition indicator* $[414]_w$ indicates the last control code within the encoded information stream 400 and a transition to data or the next encoded information stream will follow the last control code. If the encoded information stream contains only control codes, the transition indicator 414_w signals the end of the encoded information stream.

Id. at 5:33-43 (emphasis added).

The specification further discloses: “FIG. 6 illustrates the bit field configuration utilizing a coding scheme according to another embodiment of the present invention.” *Id.* at 3:20-23.

Figure 6 is reproduced here:

| INFORMATION DESCRIPTION | BIT 1 | BITS 2-9 | BITS 10-17 | BITS 18-25 | BITS 26-33 | BITS 34-41 | BITS 42-49 | BITS 50-57 | BITS 58-65 |
|-------------------------|-------|-----------|------------|------------|------------|------------|------------|------------|------------|
| ALL DATA | 0 | D1 | D2 | D2 | D4 | D5 | D6 | D7 | D8 |
| 1 CONTROL CODE | 1 | 0aaa C1 | D1 | D2 | D3 | D4 | D5 | D6 | D7 |
| 2 CONTROL CODES | 1 | 10aa abbb | C1 C2 | D1 | D2 | D3 | D4 | D5 | D6 |
| 3 CONTROL CODES | 1 | 110a aabb | bccc C1 | C2 C3 | D1 | D2 | D3 | D4 | D5 |
| 4 CONTROL CODES | 1 | 1110 aaab | bbcc cddd | C1 C2 | C3 C4 | D1 | D2 | D3 | D4 |
| 5 CONTROL CODES | 1 | 1111 0aaa | bbbc cddd | deee C1 | C2 C3 | C4 C5 | D1 | D2 | D3 |
| 6 CONTROL CODES | 1 | 1111 10aa | abbb cccc | ddee efff | C1 C2 | C3 C4 | C5 C6 | D1 | D2 |
| 7 CONTROL CODES | 1 | 1111 110a | aabb bccc | ddde eeff | fggg C1 | C2 C3 | C4 C5 | C6 C7 | D1 |
| 8 CONTROL CODES | 1 | 1111 1110 | aaab bbcc | cccc eeef | ffgg ghgh | C1 C2 | C3 C4 | C5 C6 | C7 C8 |

LEGEND

aaa-hhh = 3-bit representation of the first eighth control code's original positions

Ci = 4-bit representation of the of the i-th control code

Di = 8-bit representation of the i-th data

After the positions of the control codes are determined, the remaining positions are filled by the data in ascending order starting with D1.

FIG. 6

On one hand, “[i]n reviewing the intrinsic record to construe the claims, we strive to capture the scope of the actual invention, rather than strictly limit the scope of claims to disclosed embodiments or allow the claim language to become divorced from what the specification conveys is the invention.” *Retractable Techs., Inc. v. Becton, Dickinson & Co.*, 653 F.3d 1296, 1305 (Fed. Cir. 2011) (“In reviewing the intrinsic record to construe the claims, we strive to capture the scope of the actual invention, rather than strictly limit the scope of claims to disclosed embodiments or allow the claim language to become divorced from what the specification conveys is the invention.”); *see Saffran v. Johnson & Johnson*, 712 F.3d 549, 560 (Fed. Cir. 2013) (finding that “[e]xtensive, consistent usage in the specification” supported a

reading that “accord[ed] with *every* embodiment and description presented in the . . . patent, not to mention the prosecution history”).

On the other hand, “claims are not to be interpreted by adding limitations appearing only in the specification.” *Electro Med.*, 34 F.3d at 1054.

The specification discloses that the first field and second fields “may be arranged in any predetermined order.” *Id.* at 5:65-67; *see also id.* at 4:56-60 (fields “may be arranged in many other predetermined orders within the encoded information stream 400”) & *id.* at 8:18-20 (fields “can be arranged in any of a variety of different orders, as desired by the user”).

Further, the specification suggests that there need not be any limitations on the encoding arrangement used in a particular implementation so long as the arrangement is known:

It should be appreciated that the serializer 280 may arrange the fields 414 and 418 as desired by the user. Due to the fact that the sizes of these fields vary, it is important to set and detect the transition indicator between the control codes and the data or the next encoded information stream. Therefore, the control codes and the data words must be in prearranged sequential locations in the encoded information stream 400 so that the transition indicator 414_w will signal such a transition. It is not necessary to have these fields be physically contiguous within the encoded information stream *as long as the fields can be found according to predetermined logic*.

Id. at 6:12-23 (emphasis added); *see id.* at 4:27-32 (“For instance, if 12 control characters are used, four bits are the minimum number of bits required to map each of these to control codes.

In another example, if eight control characters are used, three bits are required to uniquely map each of these to control codes.”), 5:49-50 (“Each sub-field(s) 418_z of the second field 418 has a fixed number of bits.”), 8:47-52 & 8:64-9:1.

During prosecution, the patentee noted that “the transition indicator of claim 1 is based on the number of control characters, and is used to indicate the occurrence of the final control code in the encoded information stream. In contrast, the master transition of the Walker

reference merely serves as a reference for frame synchronization, and as a flag indicating when a frame is composed exclusively of information words” (Dkt. No. 137, Ex. 2, Jan. 6, 2005 Amendment, at 17.) This prosecution history does not warrant finding any limitation beyond what is already recited by surrounding language in Claim 1 (quoted above), and such language does not appear in Claim 8 or Claim 11. *See (id.* at 21 (underlining “a transition indicator” and “a location pointer” but not the Claim 1 phrase “based on the number of control characters”); *see also* ’405 Patent at Cl. 13 (dependent claim reciting “wherein said transition indicator is generated based on the number of control characters that are present”).)

Likewise, the patentee also stated:

As disclosed in the instant application, the *transition indicator* is based on the number of control characters because it is disposed in a *field 414* (preferably the last bit of the field 414) that functions as a *control code counter*.

(Dkt. No. 137, Ex. 2, Jan. 6, 2005 Amendment, at 18 (emphasis added).) But whereas some claims include “field” limitations (*see* Claims 9, 10 and 20), the claims here at issue (Claims 1, 8, and 11) do not. *See Phillips*, 415 F.3d at 1314 (“Differences among claims can also be a useful guide in understanding the meaning of particular claim terms.”); *see also Woods v. DeAngelo Marine Exhaust, Inc.*, 692 F.3d 1272, 1285 (Fed. Cir. 2012) (“This court will not construe this otherwise clear term to include a limitation already present in some claims but not others.”).

On balance, the above-discussed disclosures demonstrate that using a single bit within a field (set to a logical level opposite the logical level of preceding bits) as a “transition indicator” is an example, and nothing in the prosecution history warrants finding any disclaimer. *See, e.g., Electro Med.*, 34 F.3d at 1054; *Phillips*, 415 F.3d at 1323; *Omega Eng’g v. Raytek Corp.*, 334 F.3d 1314, 1324 (Fed. Cir. 2003) (“As a basic principle of claim interpretation, prosecution disclaimer promotes the public notice function of the intrinsic evidence and protects the public’s

reliance on *definitive* statements made during prosecution.”) (emphasis added); *id.* at 1325-26 (“[F]or prosecution disclaimer to attach, our precedent requires that the alleged disavowing actions or statements made during prosecution be both *clear and unmistakable*”) (emphasis added); *Golight, Inc. v. Wal-Mart Stores, Inc.*, 355 F.3d 1327, 1332 (Fed. Cir. 2004) (“Because the statements in the prosecution history are subject to multiple reasonable interpretations, they do not constitute a clear and unmistakable departure from the ordinary meaning of the term”).

Finally, Defendants argue that the construction of “transition indicator” should take into account the recital in Claim 7 of: “based on the value of said transition indicator, determining the locations of said location pointers, said control codes, and said data words in said encoded information stream.” Defendants conclude that the “transition indicator” therefore must be arranged so as to indicate all such transitions.

As Plaintiff pointed out at the December 3, 2015 hearing, this argument does not appear in Defendants’ claim construction brief. (*See* Dkt. No. 142.) Defendants thus waived any such argument. *See CardSoft, LLC v. VeriFone, Inc.*, 769 F.3d 1114, 1119 (Fed. Cir. 2014) (“Arguments that are not appropriately developed in a party’s briefing may be deemed waived.”). Moreover, even if considered, Defendants’ argument as to Claim 7 is unavailing because even though the antecedent basis for “said transition indicator” in dependent Claim 7 is “a transition indicator” in independent Claim 1, dependent Claim 7 is naturally of narrower scope than the claim from which it depends—namely Claim 1. *See, e.g., AK Steel Corp. v. Sollac & Ugine*, 344 F.3d 1234, 1242 (Fed. Cir. 2003) (“dependent claims are presumed to be of narrower scope than the independent claims from which they depend”). In other words,

Defendants have not demonstrated that the construction of “transition indicator” throughout all claims should be limited by the language that appears in dependent Claim 7.

The Court accordingly hereby construes **“transition indicator”** to mean **“one or more bits that indicate the occurrence of a final control code in an encoded information stream.”**

F. “location pointer”

| Plaintiff’s Proposed Construction | Defendants’ Proposed Construction |
|---|--|
| “one or more bits for a control code representative of the sequential position within an information group of the corresponding control character” ⁸ | “bits indicating the sequential position of the corresponding control character ⁹ within the information group” |

(Dkt. No. 132, Ex. B, at 3; Dkt. No. 137, at 21; Dkt. No. 142, at 22; Dkt. No. 154, at 3.) The parties submit that this disputed term appears in Claims 1, 8, and 11. (Dkt. No. 154, at 3.)

(1) The Parties’ Positions

Plaintiff argues that whereas its proposed construction “comes from the express language of the claims,” “Defendants depart from the claim language and fail to define what a ‘corresponding control character’ corresponds to; where it should correspond to a control code.” (Dkt. No. 137, at 21.)

Defendants argue that Plaintiff’s proposed construction “is unwieldy and confusing.” (Dkt. No. 142, at 23.) Defendants also argue that their proposal of “corresponding control character” is not confusing because “[i]f an information group includes multiple control

⁸ Plaintiff previously proposed: “for a control code, a field representative of the sequential position within an information group of the corresponding control character.” (Dkt. No. 132, Ex. A, at 2.)

⁹ This word appears as “characters” (plural) in the parties’ November 19, 2015 Joint Claim Construction Chart and the parties’ November 30, 2015 Amended Joint Claim Construction Chart. *See* (Dkt. No. 150 at 3 & 9); *see also* (Dkt. No. 154 at 3 & 10.) The construction briefed by Defendants, however, uses the singular “character.” *See* (Dkt. No. 142 at 22.)

characters, then the first location pointer corresponds to the control character decoded from the first control code, the second location pointer corresponds to the control character decoded from the second control code, and so on.” (*Id.* at 24.)

Plaintiff replies that “Defendants’ construction departs from the claim language without explanation and fails to make clear what the ‘control characters’ corresponds [*sic*] to (they should correspond to a control code).” (Dkt. No. 147, at 10.)

At the December 3, 2015 hearing, Plaintiff argued that the claimed invention could encompass embodiments with only two locations, in which case a single bit would be sufficient as a location pointer. Defendants responded that the ’405 Patent contains no disclosure of using a single-bit location pointer or of having only two locations.

(2) Analysis

Claim 1 of the ’405 Patent, for example, recites (emphasis added):

1. A method for transporting multi-word information groups containing data words and control characters over a communications link, comprising the steps of:
 - (a) determining whether each of said information groups includes control characters;
 - (b) for each information group that does not include control characters, setting a data indicator and combining said data indicator with the data words of the information group to generate an encoded information stream including said data indicator and the data words; and
 - (c) for each information group that includes one or more control characters, generating an encoded information stream by the steps of,
 - (i) encoding the control characters to control codes,
 - (ii) generating a transition indicator based on the number of control characters for indicating the occurrence of a final control code in the encoded information stream,
 - (iii) generating a *location pointer* for each of the control codes representative of the sequential position within the information group for each of the corresponding control characters, and
 - (iv) combining the control codes, the data words, said location pointers, and said transition indicator for each information group to form the encoded information stream.

The specification discloses:

The first and second fields 414 and 418 are for storing information relating to the number of control characters and their *sequential position within the information group*.

'405 Patent at 4:66-5:2 (emphasis added).

For instance, if the information group includes eight words and control characters are present in the second and seventh words, the second field 418 would include six bits set to "010111" where the first 3-bit sub-field 418_1 includes bits "010" as a *location pointer* for a control character in the second word and the second 3-bit sub-field 418_2 includes bits "111" as a *location pointer* for a control character in the seventh word. Again, it should be appreciated that the first and second fields 414 and 418 and the sub-fields 418_z may be arranged in other predetermined orders.

Id. at 5:58-67 (emphasis added).

The control code sub-field(s) 430_x and the data fields 420_y , if any data is present, are then read and decoded by the rate optimizing decoder 320. The control characters and the decoded data words may then be combined in their proper order for outputting to the codec 340 so that the information group is generated which contains data and control characters in their originally transmitted form.

Id. at 6:42-49.

After the transition indicator 414_w ("0" bit) is encountered in the first field 414, the *location pointer(s)* P_j are read from the predetermined positions of the second field 418. The size of the second field 418 is determined by multiplying the number of counted control codes (i) and the predetermined size of each sub-field 418_z . In one example, if four control codes are counted and the size of each sub-field 418_z is three, then the size of the second field is 12 bits. To read the location pointer(s) P_j a counter j is initialized ($j=1$) at step 638. Then, the location pointer P_1 is read from the second field 418 at step 640. At step 642, the counter j is compared to the number of control codes that have been counted (counter i) in the encoded information stream 400. If $j \neq i$, there is at least one more location pointer P_j to be read from the second field 418. Therefore, the counter j is incremented at step 643 and the next location pointer is read at step 640. However, if $j=i$, then all of the location pointer(s) P_j have been read and the control codes C_i may be now read at step 644.

Because the number of control codes C_i has been counted, the sizes of the first and second fields 414 and 418 have been determined, and the size of each control code sub-field 430_x is known, the control code sub-field(s) 430_x may be read and decoded to control characters at step 644. Next, any remaining fields will correspond to data field(s) D_k and the data field(s) 420_y may be read by the rate optimizing decoder 320 at step 648. *Using the location pointer(s) P_j , the order of*

the control characters are known so that the control characters and the data may be ordered by the rate optimizing decoder 320 at step 650. Then, the output blocks of control character(s) and any present data may be output from the codec 340 in their original GbE format at step 654.

Id. at 8:45-9:9 (emphasis added).

On balance, use of a particular number of locations or use of a particular number of bits for a “location pointer” are specific features of disclosed embodiments that should not be imported into the claims. *See, e.g., Electro Med.*, 34 F.3d at 1054; *Phillips*, 415 F.3d at 1323. Otherwise, however, Defendants properly argue that Plaintiff’s proposed construction “is unwieldy and confusing.” (Dkt. No. 142, at 23.)

The Court therefore hereby construes **“location pointer”** to mean **“one or more bits indicating the sequential position of the corresponding control character within the information group.”**

G. “generating a transition indicator”

| Plaintiff’s Proposed Construction | Defendants’ Proposed Construction |
|---|--|
| No additional construction needed beyond the construction proposed for “transition indicator” | “setting a bit to a logical level opposite the logical level of all preceding bits in an encoded information stream and disposing that bit at the end of the field that functions as a control code counter to indicate the transitions within the encoded information stream” |

(Dkt. No. 132, Ex. A, at 2; *id.*, Ex. B, at 1-2; Dkt. No. 137, at 22; Dkt. No. 142, at 21; Dkt. No. 154, at 3.) The parties submit that this disputed term appears in Claims 1, 8, and 11. (Dkt. No. 154, at 3.)

(1) The Parties’ Positions

Plaintiff submits: “Defendants have essentially proposed to construe ‘generating’ to mean ‘setting and disposing.’ Nothing in the claims, specification or prosecution history supports such

a construction.” (Dkt. No. 137, at 22.) Plaintiff argues that “the ’405 patent only describes the setting of bits as one exemplary way to generate an item such as a transition indicator or a location pointer,” and “[t]he ’405 patent never describes ‘generating’ as limited to disposing bits in a certain order or arrangement.” (*Id.* at 23-24.)

Further, Plaintiff argues, “[w]hile Defendants’ proposed construction of ‘transition indicator’ requires that the transition indicator be a bit set ‘to a logical level opposite the logical level of all preceding bits within the field *that functions as a control code counter*,’ Defendants’ proposed construction of ‘generating a transition indicator’ would further require the transition indicator to be set ‘to a logical level opposite the logical level of all preceding bits *in an encoded information stream*.’” (*Id.* at 24.) Plaintiff urges that “the claims of the ’405 patent should not be read to require the transition indicator to be in a particular field or at a logical level opposite of any preceding bits in a field, let alone all preceding bits in the output encoded information stream.” (*Id.* at 24-25.)

Defendants respond that their proposed construction is consistent with the disclosed “juxtaposition of one or more bits—all of which are set to the same logical level—that function as a control code counter, on the one hand, and the transition indicator bit that follows and is set to the opposite logical level, on the other” (Dkt. No. 142, at 22.) Defendants also cite prosecution history. (*Id.*)

Plaintiff replies that the disclosure relied upon by Defendants “does not mention ‘generating’ or ‘disposing’ bits strategically, and is plainly not limiting.” (Dkt. No. 147, at 7.) Likewise, Plaintiff argues, “the portion of the prosecution history relied on [by Defendants] does not mention ‘generating’ or distinguish the prior art, let alone distinguish the prior art based on

the position that generating requires the strategic disposing of bits. Instead, the prosecution history merely provides a description of the preferred embodiment.” (*Id.*)

At the December 3, 2015 hearing, Plaintiff argued that although setting a bit can be an example of “generating,” combining bits that have already been set is also “generating.”

Defendants responded that placement of the transition indicator is important because it informs the decoder about how many location pointers and control codes will follow.

(2) Analysis

Claim 1 of the ’405 Patent, for example, recites in relevant part (emphasis added):

1. A method for transporting multi-word information groups containing data words and control characters over a communications link, comprising the steps of:

- ...
 - (c) for each information group that includes one or more control characters, generating an encoded information stream by the steps of,
 - (i) encoding the control characters to control codes,
 - (ii) *generating a transition indicator* based on the number of control characters for indicating the occurrence of a final control code in the encoded information stream,
 - (iii) generating a location pointer for each of the control codes representative of the sequential position within the information group for each of the corresponding control characters, and
 - (iv) combining the control codes, the data words, said location pointers, and said transition indicator for each information group to form the encoded information stream.

The specification discloses a transition indicator that is the “last bit” in a particular field:

The rate optimizing encoder 210 detects the control characters present in the information group and *generates* the information for storing in the first and second fields 414 and 418. When at least one control code is detected, the first field 414 includes a variable number of bits $414_1, \dots, 414_w$ including *a transition indicator (preferably the last bit of the first field 414)* for indicating that no more control characters are present in the information group. For instance, the first field 414 may include bits $414_1 \dots 414_{w-1}$ set to a first logical level for each time that a control character is detected, to function as control code counters. *The last bit 414_w (the transition indicator)* is set to a second logical level opposite to the first logical level when there are no more control characters within the information group, to indicate the end of the first field 414.

'405 Patent at 5:15-29 (emphasis added).

As noted above regarding the term “transition indicator,” the specification also discloses that the first field and second fields “may be arranged in any predetermined order.” *Id.* at 5:65-67; *see also id.* at 4:56-60 (fields “may be arranged in many other predetermined orders within the encoded information stream 400”) & *id.* at 8:18-20 (fields “can be arranged in any of a variety of different orders, as desired by the user”).

On balance, Defendants’ proposed construction would improperly limit the claims to specific features of disclosed embodiments, particularly as to logical levels and the location of a transition indicator. *See, e.g., Electro Med.*, 34 F.3d at 1054; *Phillips*, 415 F.3d at 1323. Likewise, during prosecution, the patentees stated that “the transition indicator is based on the number of control characters because it is disposed in a field 414 (*preferably* the last bit of the field 414) that functions as a control code counter” (Dkt. No. 137, Ex. 6, Jan. 6, 2005 Amendment, at 18 (emphasis added).)

Finally, although forms of the words proposed by Defendants, “setting” and “disposing,” appear in the specification or the prosecution history, the broader term “generating” is readily understandable, and Defendants’ proposal would tend to confuse rather than clarify the scope of the claims. *See, e.g.,* '405 Patent at 6:33-35 (“*generating* word groups in their originally transmitted form”) (emphasis added); *id.* at 6:44-49 (“The control characters and the decoded data words may then be combined in their proper order for outputting to the codec 340 so that the information group is *generated* which contains data and control characters in their originally transmitted form.”) (emphasis added).

The Court therefore hereby expressly rejects Defendants’ proposed construction. No further construction is necessary. *See U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568

(Fed. Cir. 1997) (“Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy.”); *see also O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008) (“[D]istrict courts are not (and should not be) required to construe every limitation present in a patent’s asserted claims.”); *Finjan, Inc. v. Secure Computing Corp.*, 626 F.3d 1197, 1207 (Fed. Cir. 2010) (“Unlike *O2 Micro*, where the court failed to resolve the parties’ quarrel, the district court rejected Defendants’ construction.”); *ActiveVideo Networks, Inc. v. Verizon Commcn’s, Inc.*, 694 F.3d 1312, 1326 (Fed. Cir. 2012).

The Court accordingly hereby construes “**generating a transition indicator**” to have its **plain meaning** apart from the Court’s construction of “transition indicator,” which has been presented as a distinct disputed term and which is addressed separately above.

H. “generating a location pointer” and “generating . . . a location pointer”

| Plaintiff’s Proposed Construction | Defendants’ Proposed Construction |
|---|---|
| No additional construction needed beyond the construction proposed for “location pointer” | “setting and disposing bits indicating the sequential position of the corresponding control character within the information group” |

(Dkt. No. 132, Ex. A, at 3; *id.*, Ex. B, at 2-3; Dkt. No. 137, at 22; Dkt. No. 142, at 24; Dkt. No. 154, at 3.) The parties submit that these disputed terms appear in Claims 1 and 11. (Dkt. No. 154, at 3.)

(1) The Parties’ Positions

Plaintiff argues these disputed terms together with the term “generating a transition indicator,” which is addressed above. (*See* Dkt. No. 137, at 22-24; *see also* Dkt. No. 147, at 6-8.)

Defendants present substantially the same arguments for these terms as for “location pointer” and “generating a transition indicator,” which are addressed above. (*See* Dkt. No. 142, at 24-25.)

(2) Analysis

These disputed terms present substantially the same issues as the terms “location pointer” and “generating a transition indicator,” which are addressed above.

Defendants’ proposal of “setting and disposing” lacks adequate support and would tend to confuse rather than clarify the scope of the claims. The Court therefore hereby expressly rejects Defendants’ proposed construction. No further construction is necessary. *See U.S. Surgical*, 103 F.3d at 1568; *see also O2 Micro*, 521 F.3d at 1362; *Finjan*, 626 F.3d at 1207; *ActiveVideo*, 694 F.3d at 1326.

The Court accordingly hereby construes **“generating a location pointer”** and **“generating . . . a location pointer”** to have their **plain meaning** apart from the Court’s construction of “location pointer,” which has been presented as a distinct disputed term and which is addressed separately above.

I. “combining”

| Plaintiff’s Proposed Construction | Defendants’ Proposed Construction |
|--|--|
| No construction needed | “placing like type data together in a field with respect to” |

(Dkt. No. 132, Ex. A, at 3; *id.*, Ex. B, at 4; Dkt. No. 137, at 25; Dkt. No. 142, at 28; Dkt. No. 154, at 3.) The parties submit that this disputed term appears in Claims 1, 8, and 11. (Dkt. No. 154, at 3.)

(1) The Parties' Positions

Plaintiff argues that Defendants' proposed construction is improperly limiting and "[t]he simple word 'combining' is readily understandable to both a layperson and a person of ordinary skill alike." (Dkt. No. 137, at 25.) Plaintiff urges that "[t]he claims themselves place no limitations on the particular manner in which the claimed information must be combined." (*Id.* at 26.) "Further," Plaintiff argues, "when the applicants desired to claim particular information in particular fields of the encoded information stream they did so expressly, as in claim 10." (*Id.*)

Defendants respond that "[t]he '405 Patent only discloses encoded information streams in which all of the location pointers (when present) appear in a contiguous block, all of the control codes (when present) appear in a contiguous block, and all of the data words appear in a contiguous block." (Dkt. No. 142, at 29.) Defendants likewise urge that "there is no teaching in the specification how individual location pointers can be separated from one another or how control codes can be broken up within the encoded information stream." (*Id.*)

Plaintiff replies that "the claim requires 'combining' four particular pieces of information 'to form the encoded information stream,' but does not place any limit on the manner in which such 'combining' must occur." (Dkt. No. 147, at 8.) Plaintiff reiterates that "only certain claims, and not the asserted ones, require specific fields." (*Id.*) Further, Plaintiff urges that "it is improper to read restrictive limitations from the specification into the claims in the absence of a clear intention to do so." (*Id.* at 9.) Finally, Plaintiff submits that the specification "indicat[es] that the placement of the bits in particular fields or in a particular order may be done at a user's discretion." (*Id.*)

At the December 3, 2015 hearing, Defendants argued that the claims use the term “combining” with reference to particular data types. Defendants also argued that the specification demonstrates that even if the order of fields is changed, like type data is kept together. Defendants therefore submitted that although the phrase “in a field” could perhaps be removed from their proposed construction, the phrase “like type data together” is compelled by surrounding claim language and by the specification.

(2) Analysis

On one hand, the specification discloses a “first field 414” that “may include bits . . . set to a first logical level for each time that a control character is detected, to function as control code counters.” ’405 Patent at 5:18-33. Also, the specification appears to assume that pointers for an information group are contiguous:

The size of the second field 418 is determined by multiplying the number of counted control codes (i) and the predetermined size of each sub-field 418_z.

Id. at 8:47-50; *see id.* at 5:44-47 (“the second field 418 is provided for indicating the sequential positions of the control characters within the information group”).

On the other hand, the claims at issue do not recite fields and do not recite that particular elements, such as location pointers, must be contiguous with one another. Claim 1 of the ’405 Patent, for example, recites (emphasis added):

1. A method for transporting multi-word information groups containing data words and control characters over a communications link, comprising the steps of:
 - (a) determining whether each of said information groups includes control characters;
 - (b) for each information group that does not include control characters, setting a data indicator and *combining* said data indicator with the data words of the information group to generate an encoded information stream including said data indicator and the data words; and
 - (c) for each information group that includes one or more control characters, generating an encoded information stream by the steps of,
 - (i) encoding the control characters to control codes,

- (ii) generating a transition indicator based on the number of control characters for indicating the occurrence of a final control code in the encoded information stream,
- (iii) generating a location pointer for each of the control codes representative of the sequential position within the information group for each of the corresponding control characters, and
- (iv) *combining* the control codes, the data words, said location pointers, and said transition indicator for each information group to form the encoded information stream.

Also, as Plaintiff submits, the recital of “fields” in some claims but not in Claims 1, 8, and 11 weighs against introducing a “field” limitation into the construction of “combining.” *See Phillips*, 415 F.3d at 1314 (“Differences among claims can also be a useful guide in understanding the meaning of particular claim terms.”); *see also Woods*, 692 F.3d at 1285 (“This court will not construe this otherwise clear term to include a limitation already present in some claims but not others.”). Claim 10, for example, recites (emphasis added):

10. A method for transporting multi-word information groups containing data and control characters over a communications link, comprising the steps of:

(a) encoding each of said information groups to an encoded information stream including a data indicator and data words when said information group does not include control characters; and

(b) encoding control characters to control codes, generating a transition indicator and location pointers, and *combining* said control codes, said transition indicator, said location pointers, and any data words present in said information group to form said encoded information stream when one or more control characters are included in said information group,

wherein said step (a) further comprises the step of generating the encoded information stream to include a plurality of data *fields* when said information group does not include control characters, the number of said data *fields* corresponding to the number of words in said information group, and

wherein said encoded information stream comprises a first variable length bit *field* for storing control code counters and said transition indicator, a second variable length bit *field* for storing said location pointers, a third variable length bit *field* for storing said control codes, and a fourth variable length bit *field* for storing any data words present.

The Court therefore hereby expressly rejects Defendants’ proposed construction. No further construction is necessary. *See U.S. Surgical*, 103 F.3d at 1568; *see also O2 Micro*, 521 F.3d at 1362; *Finjan*, 626 F.3d at 1207; *ActiveVideo*, 694 F.3d at 1326.

The Court accordingly hereby construes “**combining**” to have its **plain meaning**.

J. “ordering”

| Plaintiff’s Proposed Construction | Defendants’ Proposed Construction |
|-----------------------------------|-----------------------------------|
| No construction needed | “sequencing (data sets)” |

(Dkt. No. 132, Ex. A, at 3; *id.*, Ex. B, at 5; Dkt. No. 137, at 27; Dkt. No. 142, at 30; Dkt. No. 154, at 3.) The parties submit that this disputed term appears in Claim 11. (Dkt. No. 154, at 3.)

(1) The Parties’ Positions

Plaintiff argues that “to the extent that Defendants’ proposed construction attempts to require all of the control codes be grouped together as a contiguous data set, all of the data words be grouped together as a second data set, and all of the location pointers be grouped together as a third data set, it should be rejected” (Dkt. No. 137, at 28.)

Defendants respond, in full: “While the term ‘combining’ requires that all of the location pointers appear contiguously within the encoded information stream, all of the control codes appear contiguously within the encoded information stream, and all of the data words appear contiguously within the encoded information stream, the term ‘ordering’ relates to the sequence of each of those data sets. As described above, the ’405 Patent indicates that those data sets may be arranged in many different orders. The ‘ordering’ term relates to the sequence or arrangement of those data sets.” (Dkt. No. 142, at 30.)

Plaintiff replies: “Neither the claims nor the specification provide any reason to limit the manner in which ‘ordering’ must occur, let alone any reason why ‘ordering’ must be performed on ‘data sets,’ which are not referred to by the patent at all.” (Dkt. No. 147, at 10.)

At the December 3, 2015 hearing, Plaintiff argued that although the order of data must be predetermined so that encoded information can be decoded, it does not matter what the order is so long as the order is known by both the encoder and the decoder. Defendants responded by urging that the claim recites that what are ordered are data sets.

(2) Analysis

Claim 11 of the ’405 Patent recites (emphasis added):

11. A system for transporting multi-word information groups containing data words and control characters over a communications link, comprising:
a rate optimizing encoder for determining whether each of said information groups includes control characters, for each information group that does not include control characters, said rate optimizing encoder setting a data indicator and *ordering* said data indicator and the data words, and for each information group that includes one or more control characters, encoding the control characters to control codes, generating a transition indicator and a location pointer for each of the control codes, and *ordering* said transition indicator, said location pointers, said control codes and any data words; and
a serializer for generating an encoded information stream by combining said data indicator and the data words for each information group that does not include any control characters, and by combining said transition indicator, said location pointers, said control codes and any data words for each information group that includes one or more control characters.

As noted above regarding the term “transition indicator,” the specification discloses that the first field and second field “may be arranged in any predetermined order.” *Id.* at 5:65-67; *see also id.* at 4:56-60 (fields “may be arranged in many other predetermined orders within the encoded information stream 400”); *id.* at 8:18-20 (fields “can be arranged in any of a variety of different orders, as desired by the user”).

Also, the appearance of “combining” and “ordering” in the same claim suggests that those terms have different meanings. *See CAE Screenplates, Inc. v. Heinrich Fiedler GmbH & Co. KG*, 224 F.3d 1308, 1317 (Fed. Cir. 2000) (“we must presume that the use of . . . different terms in the claims connotes different meanings”); *see also Primos, Inc. v. Hunter’s Specialties, Inc.*, 451 F.3d 841, 848 (Fed. Cir. 2006) (“[T]he terms ‘engaging’ and ‘sealing’ are both expressly recited in the claim and therefore ‘engaging’ cannot mean the same thing as ‘sealing’; if it did, one of the terms would be superfluous.”); *Chi. Bd. Options Exch., Inc. v. Int’l Sec. Exch., LLC*, 677 F.3d 1361, 1369 (Fed. Cir. 2012) (noting “[t]he general presumption that different terms have different meanings”). Further, the specification discloses:

[I]f the data indicator 414₁ is not set, the encoded information stream 400 includes at least one control code that must be decoded. In such cases, the rate optimizing decoder 320 reads the first and second fields 414 and 418 from the encoded information stream 400 and determines the number and original *sequential location(s)* of the control characters. The control code sub-field(s) 430_x and the data fields 420_y, if any data is present, are then read and decoded by the rate optimizing decoder 320. The control characters and the decoded data words may then be *combined in their proper order* for outputting to the codec 340 so that the information group is generated which contains data and control characters in their originally transmitted form.

⁴⁰⁵ Patent at 6:36-49 (emphasis added).

On balance, Defendants’ proposed construction is consistent with the intrinsic evidence, and “some construction of the disputed claim language will assist the jury to understand the claims.” *See TQP Dev., LLC v. Merrill Lynch & Co., Inc.*, No. 2:08-CV-471, 2012 WL 1940849, at *2 (E.D. Tex. May 29, 2012) (Bryson, J.). Defendants’ proposal of the parenthetical “(data sets),” however, would tend to confuse rather than clarify the scope of the claims and is therefore omitted from the Court’s construction.

The Court accordingly hereby construes “**ordering**” to mean “**sequencing**.”

K. “information groups,” “multi-word information groups,” “generating . . . location pointers,” and “location pointers”

| | |
|---|---|
| <p align="center">“information groups” (Claims 1, 3, 8, and 11)</p> <p align="center">“multi-word information groups” (Claims 1, 8, and 11)</p> | |
| Plaintiff’s Proposed Construction | Defendants’ Proposed Construction |
| No construction needed, beyond the construction proposed for “information group” | “more than one series of segmented and unencoded information” |
| <p align="center">“generating . . . location pointers” (Claim 8)</p> | |
| Plaintiff’s Proposed Construction | Defendants’ Proposed Construction |
| No additional construction needed beyond the construction proposed for “location pointer” | “setting and disposing sets of bits indicating the sequential positions of the corresponding control characters within the information group” |
| <p align="center">“location pointers” (Claims 1, 8, and 11)</p> | |
| Plaintiff’s Proposed Construction | Defendants’ Proposed Construction |
| No additional construction needed beyond the construction proposed for “location pointer” | “sets of bits indicating the sequential positions ¹⁰ of the corresponding control characters within the information group” |

(Dkt. No. 132, Ex. A, at 1 & 2; *id.*, Ex. B, at 1 & 3; Dkt. No. 137, at 28; Dkt. No. 142, at 23-24 & 26; Dkt. No. 154, at 4.)

¹⁰ This word appears as “position” (singular) in the parties’ November 19, 2015 Joint Claim Construction Chart and the parties’ November 30, 2015 Amended Joint Claim Construction Chart. *See* (Dkt. No. 150 at 3 & 9); *see also* (Dkt. No. 154 at 4 & 10). The construction briefed by Defendants, however, uses the plural “positions.” *See* (Dkt. No. 142 at 23.)

After briefing, in their November 30, 2015 Amended Joint Claim Construction Chart, the parties submitted agreed-upon constructions for “information groups” and “multi-word information groups.” (Dkt. No. 154, at 4.)

(1) The Parties’ Positions

Plaintiff argues that “as no one would have difficulty understanding the meaning of a plural term based on the construction of its singular form, these terms do not need separate construction.” (Dkt. No. 137, at 28.) Further, Plaintiff submits, “it appears that Defendants are improperly attempting to read a limitation into the claims that requires more than one location pointer present every time the plural form of that phrases [*sic*] is used. It is clear from the language of the claims, however, that the plural forms of this word can be used to refer to a single location pointer.” (*Id.* at 29.) Plaintiff urges that “[c]onsistent with the language of the claims, if only one control character is present, only one control code and location pointer would be generated.” (*Id.*) Finally, Plaintiff argues that “it is entirely unclear what is required under Defendants’ proposed construction for something to constitute a ‘set.’” (*Id.* at 30.)

Defendants argue these terms together with their singular forms. (*See* Dkt. No. 142, at 24-25 & 26-27.)

Plaintiff replies that “Defendants nowhere explain why the terms . . . should be separately construed or require construction.” (Dkt. No. 147, at 10.)

At the December 3, 2015 hearing, Plaintiff reiterated that the term “location pointers” could refer to a single location pointer. Defendants responded that construing the plural “location pointers” as being potentially singular would re-write the claims and would thus be improper.

(2) Analysis

Claims 1, 8, and 11 of the '405 Patent recite (emphasis added):

1. A method for transporting multi-word information groups containing data words and control characters over a communications link, comprising the steps of:
 - (a) determining whether each of said information groups includes control characters;
 - (b) for each information group that does not include control characters, setting a data indicator and combining said data indicator with the data words of the information group to generate an encoded information stream including said data indicator and the data words; and
 - (c) for each information group that includes *one or more control characters*, generating an encoded information stream by the steps of,
 - (i) *encoding the control characters to control codes*,
 - (ii) generating a transition indicator based on the number of control characters for indicating the occurrence of a final control code in the encoded information stream,
 - (iii) *generating a location pointer for each of the control codes* representative of the sequential position within the information group for each of the corresponding control characters, and
 - (iv) combining the control codes, the data words, said *location pointers*, and said transition indicator for each information group to form the encoded information stream.

* * *

8. [A] method for transporting multi-word information groups containing data and control characters over a communications link, comprising the steps of:
 - (a) encoding each of said information groups to an encoded information stream including a data indicator and data words when said information group does not include control characters; and
 - (b) encoding control characters to control codes, *generating* a transition indicator and *location pointers*, and combining said control codes, said transition indicator, said *location pointers*, and any data words present in said information group to form said encoded information stream when *one or more control characters* are included in said information group.

* * *

11. A system for transporting multi-word information groups containing data words and control characters over a communications link, comprising:
 - a rate optimizing encoder for determining whether each of said information groups includes control characters, for each information group that does not include control characters, said rate optimizing encoder setting a data indicator and ordering said data indicator and the data words, and for each

information group that includes *one or more control characters, encoding the control characters to control codes*, generating a transition indicator and a *location pointer for each of the control codes*, and ordering said transition indicator, said *location pointers*, said control codes and any data words; and a serializer for generating an encoded information stream by combining said data indicator and the data words for each information group that does not include any control characters, and by combining said transition indicator, said *location pointers*, said control codes and any data words for each information group that includes one or more control characters.

In general, the plural form of a noun refers to two or more, as found in *Markem-Imaje Corp. v. Zipher Ltd.*, 657 F.3d 1293, 1297 (Fed. Cir. 2011), and *Leggett & Platt, Inc. v. Hickory Springs Manufacturing Co.*, 285 F.3d 1353, 1357 (Fed. Cir. 2002). The Court addressed these and other relevant cases in *Calypso Wireless, Inc., et al. v. T-Mobile USA, Inc.*, No. 2:08-CV-441, Dkt. No. 281 at 27-32 (E.D. Tex. Dec. 3, 2012) (discussing *Flash Seats, LLC v. Paciolon, Inc.*, No. 07-575-JJF, 2010 WL 184080 (D. Del. Jan. 19, 2010), *aff'd*, 469 Fed. App'x 916 (Fed. Cir. 2012), *Every Penny Counts, Inc. v. Bank of Am. Corp.*, No. 2:07-CV-42-FTM-29SPC, 2008 WL 4491113 (M.D. Fla. Sept. 29, 2008), and *MOAEC, Inc. v. Pandora Media, Inc.*, No. 07-CV-654-BBC, 2008 WL 4500704 (W.D. Wis. Sept. 30, 2008)).

In some cases, however, a plural term does not necessarily require two or more. For example:

In the phrase “[plurality of . . .] projections with recesses therebetween,” the use of “recesses” can be understood to mean a single recess where there are only two projections and more than one recess where there are three or more projections. Indeed, . . . if the patentees had wanted to require . . . more than one recess, it would have been natural to limit the claimed invention to an insert means with a “plurality of recesses.”

Dayco Prods., Inc. v. Total Containment, Inc., 258 F.3d 1317, 1328 (Fed. Cir. 2001); *see Versa Corp. v. Ag-Bag Int'l Ltd.*, 392 F.3d 1325, 1330 (Fed. Cir. 2004) (as to the term “means . . . for creating air channels,” noting that “in context, the plural can describe a universe ranging from one to some higher number, rather than requiring more than one item”).

The parties’ agreed-upon construction for “information groups” and “multi-word information groups” requires two or more. (*See* Dkt. No. 154, at 4.)

The “location pointers,” however, correspond to “*one or more* control characters.” *See* ’405 Patent at Cls. 1, 8 & 11 (quoted above). That is, each of the “location pointers” corresponds to a particular control character and there need only be “one or more” control characters. *Dayco* and *Versa* are therefore analogous. *See* 258 F.3d at 1328 (quoted above) & 392 F.3d at 1330 (quoted above).

The Court therefore hereby construes the disputed terms as set forth in the following chart:

| <u>Term</u> | <u>Construction</u> |
|---|---|
| “information groups” “multi-word information groups” | Agreed (<i>see</i> Dkt. No. 154, at 4): “more than one series of bits comprising data words, control characters, or a combination of both data words and control characters” |
| “generating . . . location pointers” | Plain meaning apart from the Court’s constructions of “location pointer” (above) and “location pointers” (below) |
| “location pointers” | “one or more location pointers” (“location pointer” is construed separately, above) |


V. CONCLUSION

The Court adopts the constructions set forth in this opinion for the disputed terms of the patents-in-suit. The parties are ordered that they may not refer, directly or indirectly, to each other’s claim construction positions in the presence of the jury. Likewise, the parties are ordered to refrain from mentioning any portion of this opinion, other than the actual definitions adopted

by the Court, in the presence of the jury. Any reference to claim construction proceedings is limited to informing the jury of the definitions adopted by the Court.

Within thirty (30) days of the issuance of this Memorandum Opinion and Order, the parties are hereby ORDERED, in good faith, to mediate this case with the mediator designated and appointed in this case. As a part of such mediation, each party shall appear by counsel and by at least one corporate officer possessing sufficient authority and control to unilaterally make binding decisions for the corporation adequate to address any good faith offer or counteroffer of settlement that might arise during such mediation. Failure to do so shall be deemed by the Court as a failure to mediate in good faith and may subject that party to such sanctions as the Court deems appropriate.

So ORDERED and SIGNED this 7th day of December, 2015.



RODNEY GILSTRAP
UNITED STATES DISTRICT JUDGE